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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,387	07/29/2003	Eric D. Brill	MS1-524USC1	6512

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EXAMINER	
HIRL, JOSEPH P	

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/629,387	BRILL, ERIC D.	
	Examiner	Art Unit	
	Joseph P. Hirl	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20030729*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are pending in this application.

Oath/Declaration

2. The Oath/Declaration is objected to because that which has been provided is only relevant to application 09/539,356. An appropriate Oath/Declaration relevant to the instant application must be provided.

Obviousness Double-Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,684,201. Although the conflicting claims are not identical, they are not patentably distinct from each other because the narrow claim 6 of U.S. Patent 6,684,201 is a species of the Applicant's broad claim 1 (generic) (MPEP 2131.02) as evidenced by the respective claim language.

5. Claims 3, 8 and 18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,684,201. Although the conflicting claims are not identical, they are not patentably distinct from each other because the narrow claim 9 dependent on claim 4 of U.S. Patent 6,684,201 is a species of the Applicant's broad claims 3, 8, and 18 including the related independent claims (generic) (MPEP 2131.02) as evidenced by the respective claim language.

6. Claims 2 and 7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent

No. 6,684,201. Although the conflicting claims are not identical, they are not patentably distinct from each other because the narrow claim 1 of U.S. Patent 6,684,201 is a species of the Applicant's broad claims 2 and 7 including the related independent claims (generic) (MPEP 2131.02) as evidenced by the respective claim language.

7. Claim 6 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,684,201. Although the conflicting claims are not identical, they are not patentably distinct from each other because the narrow claim 1 of U.S. Patent 6,684,201 is a species of the Applicant's broad claim 6 (generic) (MPEP 2131.02) as evidenced by the respective claim language. More specifically, the "wherein" of applicant's claim 6 is defined as part of "...a set of reduced regular expressions..." as noted by the applicant's specification at page 5, lines 16-19.

8. Claim 11 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 17 of U.S. Patent No. 6,684,201. Although the conflicting claims are not identical, they are not patentably distinct from each other because the narrow claim 17 of U.S. Patent 6,684,201 is a species of the Applicant's broad claim 11 (generic) (MPEP 2131.02) as evidenced by the respective claim language. More specifically, the ".. are included ...knowledge base is learned" of applicant's claim 11 is characterized by "... reduced regular expressions ..." as noted by the applicant's specification at page 5, lines 14-22.

9. Claim 13 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 17 of U.S. Patent No. 6,684,201.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the narrow claim 17 of U.S. Patent 6,684,201 is a species of the Applicant's broad claim 13 (generic) (MPEP 2131.02) as evidenced by the respective claim language. More specifically, the ".. applying ... of the reduced regular expressions ..." of applicant's claim 13 is characterized by "... reduced regular expressions ..." as noted by the applicant's specification at page 5, lines 14-22, including page 7, lines 7-8.

10. Claim 14 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 17 of U.S. Patent No. 6,684,201. Although the conflicting claims are not identical, they are not patentably distinct from each other because the narrow claim 17 of U.S. Patent 6,684,201 is a species of the Applicant's broad claim 14 (generic) (MPEP 2131.02) as evidenced by the respective claim language. More specifically, the ".. are included ... when the knowledge base is learned ..." of applicant's claim 14 is characterized by "... reduced regular expressions ..." as noted by the applicant's specification at page 5, lines 14-22.

11. Claim 16 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,684,201. Although the conflicting claims are not identical, they are not patentably distinct from each other because the narrow claim 23 of U.S. Patent 6,684,201 is a species of the Applicant's broad claim 16 (generic) (MPEP 2131.02) as evidenced by the respective claim language.

12. Claim 17 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 22 of U.S. Patent No. 6,684,201. Although the conflicting claims are not identical, they are not patentably distinct from each other because the narrow claim 22 of U.S. Patent 6,684,201 is a species of the Applicant's broad claim 17 (generic) (MPEP 2131.02) as evidenced by the respective claim language. More specifically, the equivalency of RRE and VRRE is established in the specification at page 7, lines 7-8.

13. Claim 20 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 22 of U.S. Patent No. 6,684,201. Although the conflicting claims are not identical, they are not patentably distinct from each other because the narrow claim 22 of U.S. Patent 6,684,201 is a species of the Applicant's broad claim 22 (generic) (MPEP 2131.02) as evidenced by the respective claim language. More specifically, related characterization is established in the specification at page 5, lines 14-22.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Horiguchi et al (U. S. Patent 6,282,507, referred to as **Horiguchi**).

Claim 1

Horiguchi anticipates defining a set of reduced regular expressions for particular patterns in strings (**Horiguchi**, c 1, l 39-43); and learning, from a training set, a knowledge base that uses the reduced regular expressions to resolve ambiguity based upon the strings in which the ambiguity occurs, wherein the learning includes transformation sequence learning to create a set of rules that use the reduced regular expressions to resolve ambiguity based upon the strings in which the ambiguity occurs (**Horiguchi**, c 15, l 66-67; c 16, l 1-25; Examiner's Note (EN): the ordered list of utterance hypotheses represent rules produced by a transformation sequence learning).

Claims 2, 7

Horiguchi anticipates the set of reduced regular expressions are defined over a finite alphabet Σ, wherein the alphabet is a union of multiple sets of distinct classes (**Horiguchi**, c 14, l 36-55; EN: such as " multiple examples may be identified and combined 1114 to match an input because the matching and transfer procedure works recursively over parts of the shallow syntactic input structure).

Claims 3, 8, 18

Horiguchi anticipates the training set comprises a labeled corpus (**Horiguchi**, c 22, l 53-62).

Claim 4

Horiguchi anticipates the set of reduced regular expressions specify types of patterns that are allowed to be explored when learning from the training set (**Horiguchi**, c 16, l 13-18).

Claims 5, 10, 12, 15

Horiguchi anticipates the learning includes applying a set of very reduced regular expressions that are a proper subset of the reduced regular expressions (**Horiguchi**, c 14, l 36-55).

Claim 6

Horiguchi anticipates defining a set of reduced regular expressions for particular patterns in strings (**Horiguchi**, c 1, l 39-43); and learning, from a training set, a knowledge base that uses the reduced regular expressions to resolve ambiguity based upon the strings in which the ambiguity occurs, wherein the set of reduced regular expressions specify types of patterns that are allowed to be explored when learning from the training set (**Horiguchi**, c 15, l 66-67; c 16, l 1-25; EN: hypothesis reduces ambiguity).

Claim 9

Horiguchi anticipates wherein the learning comprises transformation sequence learning to create a set of rules that use the reduced regular expressions to resolve ambiguity based upon the strings in which the ambiguity occurs (**Horiguchi**, c 15, l 66-67; c 16, l 1-25).

Claim 11

Horiguchi anticipates receiving a string with an ambiguity site (**Horiguchi**, c 31, claim 27); applying reduced regular expressions to describe a pattern in the string (**Horiguchi**, c 31, claim 27), wherein the reduced regular expressions: are included in a knowledge base that is learned from a training set (**Horiguchi**, c 31, claim 27); and specify types of patterns that are allowed to be explored when the knowledge base is learned (**Horiguchi**, c 31, claim 27); and selecting one of the reduced regular expressions to resolve the ambiguity site(**Horiguchi**, c 31, claim 27).

Claim 13

Horiguchi anticipates receiving a string with an ambiguity site (**Horiguchi**, c 31, claim 27); applying reduced regular expressions to describe a pattern in the string (**Horiguchi**, c 31, claim 27), wherein the applying includes applying a set of very reduced regular expressions that are a proper subset of the reduced regular expressions (**Horiguchi**, c 14, l 36-55); and selecting one of the reduced regular expressions to resolve the ambiguity site(**Horiguchi**, c 31, claim 27).

Claim 14

Horiguchi anticipates receiving a string with an ambiguity site (**Horiguchi**, c 31, claim 27); applying reduced regular expressions to describe a pattern in the string (**Horiguchi**, c 31, claim 27), wherein: the reduced regular expressions are included in a knowledge base that is learned from a training set (**Horiguchi**, c 31, claim 27); and the reduced regular expressions specify types of patterns that are allowed to be explored when the knowledge base is learned (**Horiguchi**, c 31, claim 27); and

selecting one of the reduced regular expressions to resolve the ambiguity site (**Horiguchi**, c 31, claim 27).

Claim 16

Horiguchi anticipates read a training set (**Horiguchi**, c 31, claim 27); construct a graph having a root node that contains a primary position set of the training set and multiple paths from the root node to secondary nodes that represents a reduced regular expression, the secondary node containing a secondary position set to which the reduced regular expression maps (**Horiguchi**, c 11, l 61-67; c12, l 1-17); score the secondary nodes to identify a particular secondary node (**Horiguchi**, c 15, l 10-18; EN: match cost is the score); and identify the reduced regular expression that maps the path from the root node to the particular secondary node (**Horiguchi**, c 11, l 61-67; c12, l 1-17).

Claim 17

Horiguchi anticipates a memory to store a training set (**Horiguchi**, c 31, claim 27); a processing unit (**Horiguchi**, c 31, claim 27); and a disambiguation trainer, executable on the processing unit, to define a set of reduced regular expressions for particular patterns in strings of the training set and learn a knowledge base that uses the reduced regular expressions to describe the strings wherein the reduced regular expressions specify types of patterns that are allowed to be explored when the knowledge base is learned from the training set (**Horiguchi**, c 31, claim 27; c 15, l 60-67; c 16, l 1-4; EN: specification at page 5, l 14-22 characterizes the equivalency of

reduced regular expressions unto itself which Horiguchi maps to the hypothesis concept).

Claim 19

Horiguchi anticipates the disambiguator trainer employs transformation sequence learning to create a set of rules that use the reduced regular expressions to describe the strings (**Horiguchi**, c 23, l 8-23).

Claim 20

Horiguchi anticipates a memory to store a knowledge base that uses reduced regular expressions to resolve ambiguity based upon strings in which the ambiguity occurs (**Horiguchi**, c 31, claim 27; c 32, claim 39), wherein the knowledge base is learned from a training set using the reduced regular expressions, the reduced regular expressions specify types of patterns that are allowed to be explored when the knowledge base is learned (**Horiguchi**, c 31, claim 27; EN: computer has a memory and with the stated processing, reduced regular expressions or hypothesis mature or are learned); a processing unit (**Horiguchi**, c 31, claim 27); and a disambiguator, executable on the processing unit, to receive a string with an ambiguity site and apply a reduced regular expression from the knowledge base that describes a pattern in the string to resolve the ambiguity site (**Horiguchi**, c 31, claim 27).

Examination Considerations

16. The claims and only the claims form the metes and bounds of the invention. "Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris,* 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, l 45-48; p 2100-9, c 1, l 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

17. Examiner's Notes are provided to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and spirit of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but a link to prior art that one of ordinary skill in the art would find inherently appropriate.

18. Examiner's Opinion:

Paras 15 and 16 apply. The current application is generalized and represents the genus to the species of U.S. Patent 6,684,201 which thereby establishes an obvious double patent rejection (MPEP 2131.02). Horiguchi's prior art both explicitly and inherently anticipates the applicant's invention. Applicant must understand the Examiner's obligation to fully implement para 15 above.

Conclusion

19. The prior art of record and not relied upon is considered pertinent to applicant's disclosure.

- Brill, 1998, Machine Learning and Automatic Linguistic Analysis: The Next Step
- Brill et al, 2001, Scaling to Very Very Large Corpa for Natural Language Disambiguation
- Tan et al, 2000, Text Retrieval from Document Images Based on N-Gram Algorithm
- Shoemaker, 2003, How Regular Expressions Really Work

20. Claims 1-20 are rejected.

Correspondence Information

21. Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner, Joseph P. Hirl, whose telephone number is (703) 305-1668. The Examiner can be reached on Monday – Thursday from 6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anthony Knight can be reached at (703) 308-3179.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

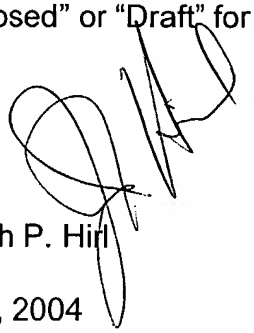
Washington, D. C. 20231;

or faxed to:

(703) 746-7239 (for formal communications intended for entry);

or faxed to:

(703) 746-7290 (for informal or draft communications with notation of "Proposed" or "Draft" for the desk of the Examiner).



Joseph P. Hirl

July 8, 2004